

CUE ESP Symposium—Kansai 2012 JALT CUE & JACET Kansai ESP SIG
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Exploring ESP Roots and Applications

Judy Noguchi
Mukogawa Women's University



Plans for today

Lecture: Exploring ESP Roots and Applications

- ▶ A bit of background
- ▶ Some concepts
- ▶ Some examples

Workshop: Identifying ESP Issues and Finding Solutions

- ▶ Issues in ESP
- ▶ Possible solutions

Why “explore ESP roots”?
Why look at ESP history?

The Rhetoric of Science Alan Gross

- ▶ “The truths of science, then, are achievements of argument.”

- ▶ “Facts are by nature linguistic--
no language, no facts.”

(Gross, 1990:103)



Sociocognitive theory of genre

Myers (1990)

Writing Biology: Texts in the Social Construction of Scientific Knowledge

“By including the word biology in the title, I hope to get this book placed on the rapidly lengthening shelf of studies of science, and particularly with studies that do not necessarily take physics as the typical science.”

I hope it will become clear, after the first chapter, that the title is not Writing ABOUT Biology because that would imply that biology is there before the writing and that the writing merely dresses it up. I argue instead that writing produces biology”

(Myers, 1990a, p. xii, emphasis in original).

"I am going to argue that the attribution of discovery is made, not just in texts, but between texts, in the interpretation of one text by another, as a process of reading as well as writing. **This process of interpretation is an essential part of the processes of recording, negotiating, selecting, arranging, and transforming statements, the processes that produce scientific knowledge.**

- ▶ So if we want to find a discovery, we can't just go back to the original articles or even earlier to the lab notebooks or recorded conversations or autoradiographs and electron micrographs. **We need to look at the interpretations of the articles as their stories are retold in news articles, review articles, textbooks, and popularizations"**

(Myers 1990b:102–103).

The general public only becomes aware of the "discovery" when it has been recognized by the discipline/discourse community and has become **"frozen into a fact"** (Myers 1990b:114). The struggle which had been waged until then is no longer needed because the "discovery" has won its place in the community consciousness.

- ▶ To the general public, science presents an image of being dispassionate and objective, but Gross claims that this is actually an achievement of its success in persuasion:

"My rhetorical analyses show how the sciences construct their specialized rhetorics from a common heritage of persuasion. By means of these, the **sciences create bodies of knowledge so persuasive as to seem unrhetorical--to seem, simply, the way the world is"**

(Gross, 1990:206–207).

So

What is ESP?

Belcher (2004) quotes from the satirical publication *The Onion* (August 15, 2001)

NEW YORK—An English as a Second Language textbook focuses predominantly on food-preparation vocabulary, night-school student Eduardo Reyes reported Monday. "I must admit, I would like to learn how to say more than, 'I have diced the onions,' and, 'Did he want scrambled or over-easy?'" said a disconsolate Reyes, speaking through a translator, following his first lesson.

"I had hoped to learn words for the different parts of the body so I can pursue my dream of becoming a doctor. I have instead learned much about the grilling of chickens."

The Onion Aug. 15, 2001

<http://www.theonion.com/search/?q=English+as+a+Second+Language&submit=Try+Again>

ESP

Is based on **collaboration between disciplinary professionals and language teachers**

Makes learners aware of **genres** and **how language is used by professionals**

Promotes **autonomous learning** with concepts and tools that enable continuing development

Terauchi et al. (2010:238)

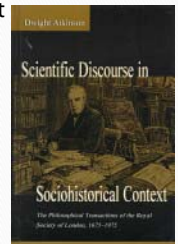


Basic concepts

- ▶ **ESP** = English for specific purposes
- ▶ **Discourse community** (DC) = Group of people who use language for a specific purpose
- ▶ **Genre** = Communication events that are regularly used by the people in the DC and therefore have characteristic features
- ▶ **PAIL** = Purpose, Audience, Information, Language features of a genre text
- ▶ **OCHA** = Observe, Classify, Hypothesize and Apply the PAIL of a genre for effective communication

ESP has a long history

- ▶ Howatt (1984): 16th century Protestant refugees to England needed English for trade and commerce
- ▶ Atkinson (1998): *Scientific Discourse in Sociohistorical Context: The Philosophical Transactions of the Royal Society of London, 1675-1975*
- ▶ Gotti (2005): *Investigating specialized discourse*
- ▶ Terauchi (2000, 2001): 1934, founding of the Japanese Business English Association



Birth of a new genre

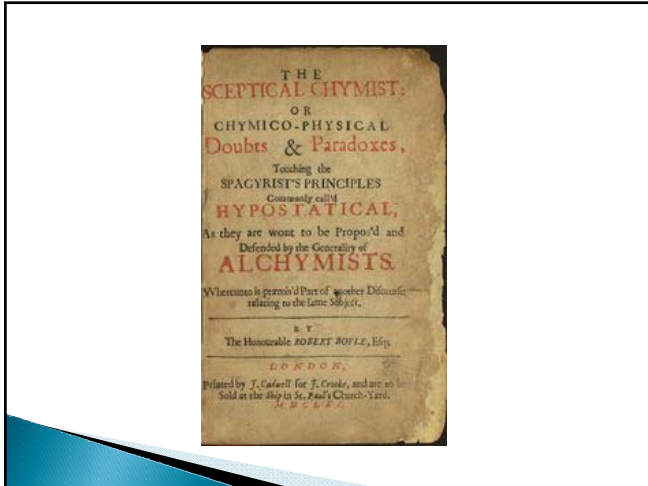
- ▶ Scientific progress in the 17th century >> Need for a **new expository genre** to describe them
- ▶ Traditional literary essays did not suit the epistemic approach used by the men of science following the approach of Francis Bacon

Gotti (2005:171)

A new community

- ▶ 28 November 1660 Preliminary meeting of the founders of the Royal Society
- ▶ 1663 Granted charter of incorporation by Charles II
- ▶ Motto: "Nullius in Verba" (Latin: "On the words of no one") — **Commitment to establishing the truth of scientific matters through experiment rather than through citation of authority"**

<http://en.wikipedia.org/wiki/Royal_Society>



- ▶ 1660 – New Experiments Physico-Mechanical: Touching the Spring of the Air and their Effects
- ▶ 1661 – The Sceptical Chymist
- ▶ 1663 – Considerations touching the Usefulness of Experimental Natural Philosophy (followed by a second part in 1671)
- ▶ 1663 – Experiments and Considerations upon Colours, with Observations on a Diamond that Shines in the Dark
- ▶ 1665 – New Experiments and Observations upon Cold

The Sceptical Chymist or Chymico-Physical Doubts & Paradoxes (1661)

- ▶ “The chief value of *The Sceptical Chymist*, aside from its main message, was the wealth of chemical experiment that **showed the chemist how to employ standard terms and nomenclature in chemical explanation and also presented new chemical fact.**”

<http://en.wikipedia.org/wiki/The_Sceptical_Chymist>

When did the ESP of today get started?

- ▶ Rise of ESP with the collapse of British colonialism
 - Independence from Britain
 - Rejection of traditional English syllabus
- ▶ Flowering in 50s and 60s
 - Developments in science and technology
 - Use of English as an international language

Dudley-Evans and St. John (1998)

The Linguistic Sciences and Language Teaching Halliday, McIntosh and Strevens (1964:174-175)

“There is **no reason why the student of a foreign language should be required to study ‘the whole language’**, which, in any case, is an aim impossible of achievement...nor why he should study certain registers (such as the language of literature) if his need is for quite other ones.”

(1964:174-175, as quoted in Bloor, 2002:19)

Halliday, McIntosh and Strevens (1964:174-175, as quoted in Bloor, 2002:19)

- ▶ **More efficient** to aim at trying to have our students learn the “**registers**” or “**genres**” or whatever they are called, that they need.
- ▶ Does not refer to rote learning of surface structures but together with the **deep sociorhetorical reasons** for them.

But

- ▶ Bloor (2002:17): “many key texts on English language teaching and Applied Linguistics published in the 1960s and even the 1970s make no mention of ESP.”

Why?

Register analysis

- ▶ Focus on grammatical and lexical features of scientific and technical English
- ▶ Barber, C.L. (1962). Some measurable characteristics of modern scientific prose. (In Swales, J. (ed.) (1985). *Episodes in ESP*. Oxford: Pergamon Institute of English.)
- ▶ Herbert, A.J. (1965) *The Structure of Technical English*. London: Longman.

Rhetorical and discursal aspects of science and technology texts

- ▶ Lackstrom, Selinker and Trimble (1973) introduced the relationship of language use with form
- ▶ Widdowson (1978) *Teaching Language as Communication*. Oxford: Oxford University Press
- ▶ Allen and Widdowson (1974) *The Focus Series*
- ▶ Bates and Dudley-Evans (1976) *Nucleus General Science*

Study skills and needs analysis

- ▶ Munby (1978) *Communicative Syllabus Design*. Cambridge: Cambridge University Press
- ▶ Hutchinson and Waters (1980) ESP at the crossroads. *English for Specific Purposes*. Oregon State University, 36:1–6. Reprinted in J. M. Swales (ed.) *Episodes in ESP*

ESP in the 90s

- ▶ English for Occupational Purposes (EOP)
- ▶ English for Academic Purposes (EAP)
- ▶ Research on the uses of English in specific contexts

(Bloor 2002)

Genre Analysis:
English in
Academic and
Research
Settings (1990)
John M. Swales



Swales: Discourse community

(1990:24–27)

- “a. having a broadly agreed set of **common public goals**
- b. having **mechanisms of intercommunication** among its members
- c. using its **participatory mechanisms** primarily to provide information and feedback
- d. utilizing and hence **possessing one or more genres** in the communicative furtherance of its aims
- e. having acquired some **specific lexis**
- f. having **a threshold level of members** with a suitable degree of relevant contacts and discursal expertise.”

Snapshot of ESP history

- ▶ 1960s Register analysis
- ▶ 1970s Rhetorical and discourse analysis
- ▶ 1980s Needs analysis and study skills
(Dudley-Evans, T. & St. John, M. J., 1998)
- ▶ 1990s Genre analysis (Swales, J., 1990)
- ▶ 2000s Genres in situated contexts

Belcher (2004): An overview of ESP

"Trends in teaching English for specific purposes" (*Annual Review of Applied Linguistics*)

Three major influences

Sociodiscoursal

Sociocultural

Sociopolitical

Note that all terms begin with "socio"
For ESP, "no community, no language"

Sociodiscoursal

- ▶ **Genre theory** proposed by Swales (1990, 2004)
- ▶ **Lexical patterns** (Hyland (2001, 2003, 2008; Cortes 2004, and others)
- ▶ **Corpus linguistics** (COBUILD, MICASE)
- ▶ **New Rhetoric** (Bazerman & Paradis, 1991; Berkenkotter & Huckin, 1995; Bakhtin (Holquist) 1981)
- ▶ **Systemic-Functional Linguistics** work based on Halliday and the Sydney School (Halliday 1992ab; Leckie-Tarry, 1995)

Sociocultural: developments based on situated learning (Lave & Wenger, 1991)

- Scaffolding entry by novices into expert communities

Sociopolitical: critically examining the effects of ESP on discourse (Master, 1998)

- Implications of English dominance; need for speakers of other languages to gain own voice
 - ELF = English as a lingua franca
 - EAL = English as an additional language
 - Cook (1992) "Language teaching should try to produce multicompetent individuals not ersatz native speakers."

Belcher (2004:178) concludes:

"In attempting to characterize all the research goals ..., I would describe them as aimed at

deeper knowledge of texts and contexts, and

broader knowledge of more, and more varied, school, workplace, and other community settings."

"In addition, however, I would characterize the goals as aimed at a multidimensional knowledge of where discourses and their communities, as well as the ESP professionals committed to understanding and teaching them, are situated in the world at large."

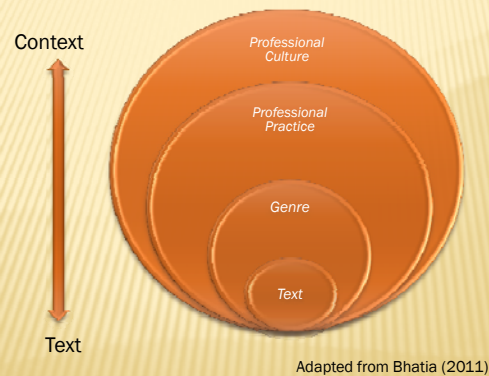
Belcher (2004:178)

Writing in the professions

- ▶ Is not creative but “an inventive bricolage”
- ▶ Uses templates
- ▶ Is drafted individually but edited collaboratively

Bhatia (2011)

Perspective view of text and its relationship to the profession



Getting a hold on ESP

Tools to master **genres**

OCHA

PAIL

Corpus, concordancing software,
collocation

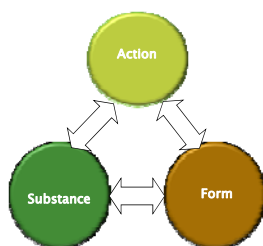
Genre: A heuristic definition

Genre is a type of **recurring communicative event** of specific **substance, form and action** in a focused global **discourse community** which is recognized by the communicator, who is a member of the community, ... but may or may not be aimed at a receiver in the same community.

[Noguchi 2006: 41 *Based on work of Swales (1990), Bhatia (1993), Miller (1984)*]

Visual concept of genre

Effect on the discourse community



Information for the
discourse community

Linguistic packaging
for genre recognition

OCHA

- ▶ Observe
- ▶ Classify
- ▶ Hypothesize
- ▶ Apply



PAIL

Purpose

Audience

Information

Language features

Rhetorical framework

Collocations

Grammar

Pronunciation & prosody

*Some examples of
heuristic "quick-and-dirty" genre
analyses*

The Fox and the Grapes



- A. He walked away with an air of dignity and unconcern.
- B. "IT IS EASY TO DESPISE WHAT YOU CANNOT GET."
- C. So he gave up trying.
- D. One day, a hungry Fox saw some fine bunches of grapes hanging from a vine on a high trellis.
- F. But the grapes were just out of reach.
- E. He said, "I thought those Grapes were ripe, but I see now they are quite sour."
- G. He did his best to reach them by jumping as high as he could into the air.

The Fox and the Grapes



- D. **One day**, a hungry Fox saw some fine bunches of grapes hanging from a vine on a high trellis.
- G. **He** did his best to reach them by jumping as high as he could into the air.
- F. **But** the grapes were just out of reach.
- C. **So** he gave up trying.
- A. He walked away with an air of dignity and unconcern.
- E. **He said**, "I thought those Grapes were ripe, but I see now they are quite sour."
- B. "IT IS EASY TO DESPISE WHAT YOU CANNOT GET." (**capital letters**)

Examining the "parable" genre

- ▶ **Purpose:** To illustrate a moral lesson
- ▶ **Audience:** General public, often children
- ▶ **Information:** A short story to aid understanding of the moral lesson
- ▶ **Language features:** **Moves** embodying lexicogrammatical, phonological and technical features
 - **Orientation:** Sets the scene, gives details of who, when, where
 - **Incident:** Relates an event with a lesson
 - **Advice:** Expresses a truth revealed by the simple event

A more specialized example

Green Tea Catechins and Their Oxidative Protection in the Rat Eye

Catechins, active constituents of green tea, are well-known antioxidative natural products. It was proposed that green tea extract (GTE) consumption could benefit the eye, and the pharmacokinetics of catechins and oxidation status in rat eye were investigated after oral administration. Sprague-Dawley rats were fed GTE and sacrificed at different time intervals. Their eyes were dissected into cornea, lens, retina, choroid-sclera, vitreous humor, and aqueous humor for analysis of catechins and 8-epi-isoprostane by HPLC-ECD and GC-NCI-MS, respectively. Catechins were differentially distributed in eye tissues. Gallocatechin was present at the highest concentration in the retina, 22729.4 ± 4229.4 pmol/g, and epigallocatechin in aqueous humor at 602.9 ± 116.7 nM. The corresponding area-under-curves were $207,000$ pmol \times h/g and 2035.0 ± 531.7 nM \times h, respectively. The time of maximum concentration of the catechins varied from 0.5 to 12.2 h. Significant reductions in 8-epi-isoprostane levels were found in the compartments except the choroid-sclera or plasma, indicating antioxidative activities of catechins in these tissues.

(Chu et al. 2010)

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- ▶ **Background**
- ▶ **Aim of study**
- ▶ **Materials and Methods**

Catechins **were differentially distributed** in eye tissues. Gallicocatechin **was present at the highest concentration** in the retina, 22729.4 ± 4229.4 pmol/g, and epigallocatechin in aqueous humor at 602.9 ± 116.7 nM. The corresponding area-under-curves were $207,000 \text{ pmol} \times \text{h/g}$ and $2035.0 \pm 531.7 \text{ nM} \times \text{h}$, respectively. The time of maximum concentration of the catechins varied from 0.5 to 12.2 h. **Significant reductions** in 8-epi-isoprostane levels **were found** in the compartments except the choroid-sclera or plasma, **indicating** antioxidative activities of catechins in these tissues.

▶ Results

▶ Conclusions

Examining the “abstract” genre

- ▶ **Purpose:** To summarize a research article
- ▶ **Audience:** Researchers in related areas
- ▶ **Information:** Rationale, materials and methods, results and conclusions of the research described
- ▶ **Language features:** **Moves** embodying lexicogrammatical, phonological and technical features:
 - **Background:** Importance of research area and topic
 - **Purpose:** The aim of the research described
 - **Materials and methods:** How the research was done
 - **Results and Conclusions:** The findings and what the research contributes to the field

Green Tea Catechins and Their Oxidative Protection in the Rat Eye

Catechins, active constituents of green tea, **are well-known** antioxidative natural products. **It was proposed that** green tea extract (GTE) consumption could benefit the eye, and the pharmacokinetics of catechins and oxidation status in rat eye **were investigated** after oral administration. Sprague–Dawley rats were fed GTE and sacrificed at different time intervals. Their eyes were dissected into cornea, lens, retina, choroid-sclera, vitreous humor, and aqueous humor for analysis of catechins and 8-epi-isoprostane by HPLC-ECD and GC-NCI-MS, respectively. Catechins **were differentially distributed** in eye tissues. Gallicocatechin **was present at the highest concentration** in the retina, 22729.4 ± 4229.4 pmol/g, and epigallocatechin in aqueous humor at 602.9 ± 116.7 nM. The corresponding area-under-curves were $207,000 \text{ pmol} \times \text{h/g}$ and $2035.0 \pm 531.7 \text{ nM} \times \text{h}$, respectively. The time of maximum concentration of the catechins varied from 0.5 to 12.2 h. **Significant reductions** in 8-epi-isoprostane levels **were found** in the compartments except the choroid-sclera or plasma, **indicating** antioxidative activities of catechins in these tissues.

Google Scholar August 24, 2012

- ▶ **are well-known** antioxidative natural products 9件
- ▶ **are well known** 約 773,000件
- ▶ **It was proposed that** green tea extract (GTE) consumption could benefit...were investigated 9件
- ▶ **it was proposed that** 約 211,000件
- ▶ **could benefit** 約 250,000件
- ▶ **were investigated** 約 867,000件

- ▶ was present at the highest concentration 約 206 件
- ▶ was present at the * concentration 約 703 件
- ▶ Significant reductions in 8-epi-isoprostane levels were found in the compartments except the choroid-sclera or plasma, indicating 1 件
- ▶ significant * were found 約 386,000 件
- ▶ were found * indicating 約 872 件

So, ESP is a way to learn (teach) *the language needed* to participate in *discourse community* environments via *shared genres* based on a grasp of *systemic literacy* as a *life-long endeavor*.

Systemic literacy

- ▶ Deeper knowledge of texts and contexts
- ▶ Broader knowledge of more varied school, workplace, and other community settings
- ▶ Situated in the world at large

Creating a Culture of Learning John Seely Brown (2008: xi)

The world becomes more complex and interconnected at a lightning-fast pace, and almost every serious social issue requires an engaged public that is not only traditionally literate, but adept in *a new, systemic literacy*. This new literacy requires an understanding of different kinds of feedback systems, exponential processes, the unintended consequences inherent in evolving social systems, etcetera.

Life-long learning

In addition, the unrelenting velocity of change means that many of our skills have a shorter shelf life, suggesting that *much of our learning will need to take place outside of traditional school and university environments*.

Brown (2008:xi)

ESP is about

- ▶ becoming aware of *genres* and
- ▶ using *OCHA* and *PAIL* to understand these genres
- ▶ in order to develop *systemic literacy*
- ▶ and continue learning as a *life-long endeavor*

Any questions?

jnoguchi@mukogawa-u.ac.jp

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